Fig 1A

[100 120 90 80 102 88 55 16]

Fig 1B

130 150 200 255 100 56 10 12
120 200 111 201 178 77 30 11
189 176 100 211 189 17 20 13
120 200 111 201 178 79 30 11
185 106 130 241 189 97 20 19
119 186 120 231 189 21 60 43
120 200 111 201 178 79 30 11
185 106 130 241 189 97 20 19

Fig 2

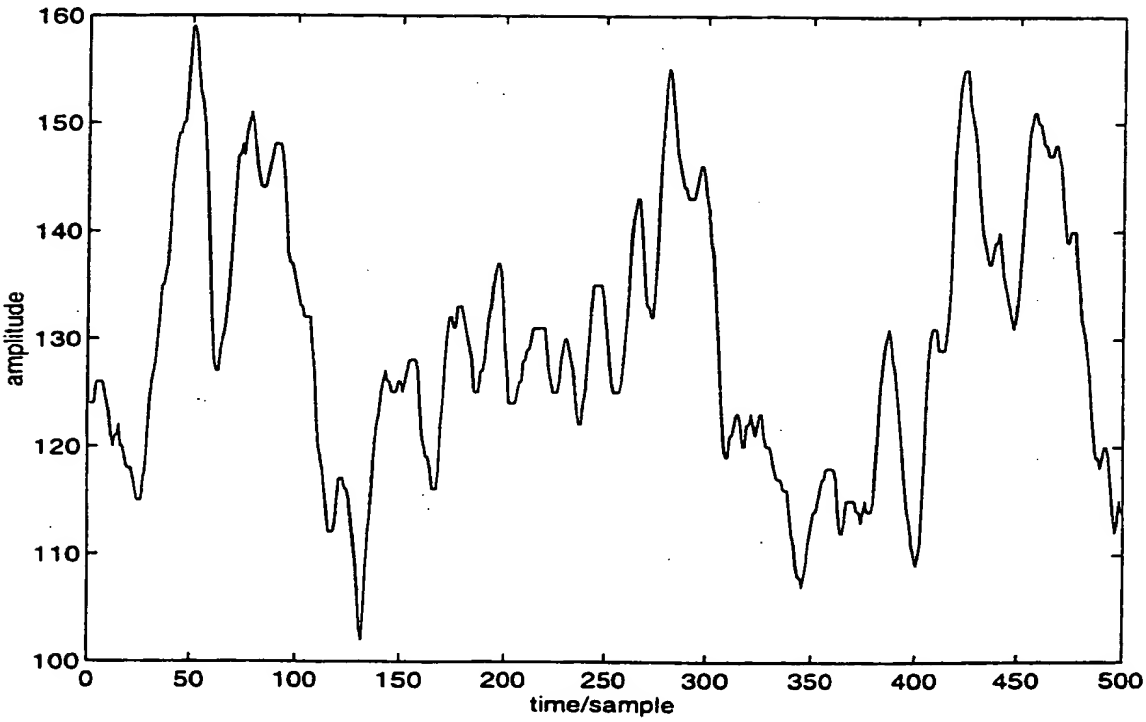

Figure 3

Fig 4

ASCII Character Set

	0	1	2	3	4	5	6	7	8	9
0	nul	soh	stx	etx	eot	enq	ack	bel	bs	ht
1	nl	vt	ff	cr	so	si	dle	dc1	dc2	dc3
2	dc4	nak	syn	etb	can	em	sub	esc	fs	gs
3	rs	us	sp	!	"	#	$	%	&	'
4	(	)	*	+	,	-	.	/	0	1
5	2	3	4	5	6	7	8	9	:	;
6	<	=	>	?	@	A	B	C	D	E
7	F	G	H	I	J	K	L	M	N	O
8	P	Q	R	S	T	U	V	W	X	Y
9	Z	[	\	]	^	_	`	a	b	c
10	d	e	f	g	h	i	j	k	l	m
11	n	o	p	q	r	s	t	u	v	w
12	x	y	z	{	|	}	~	del		

Fig 5

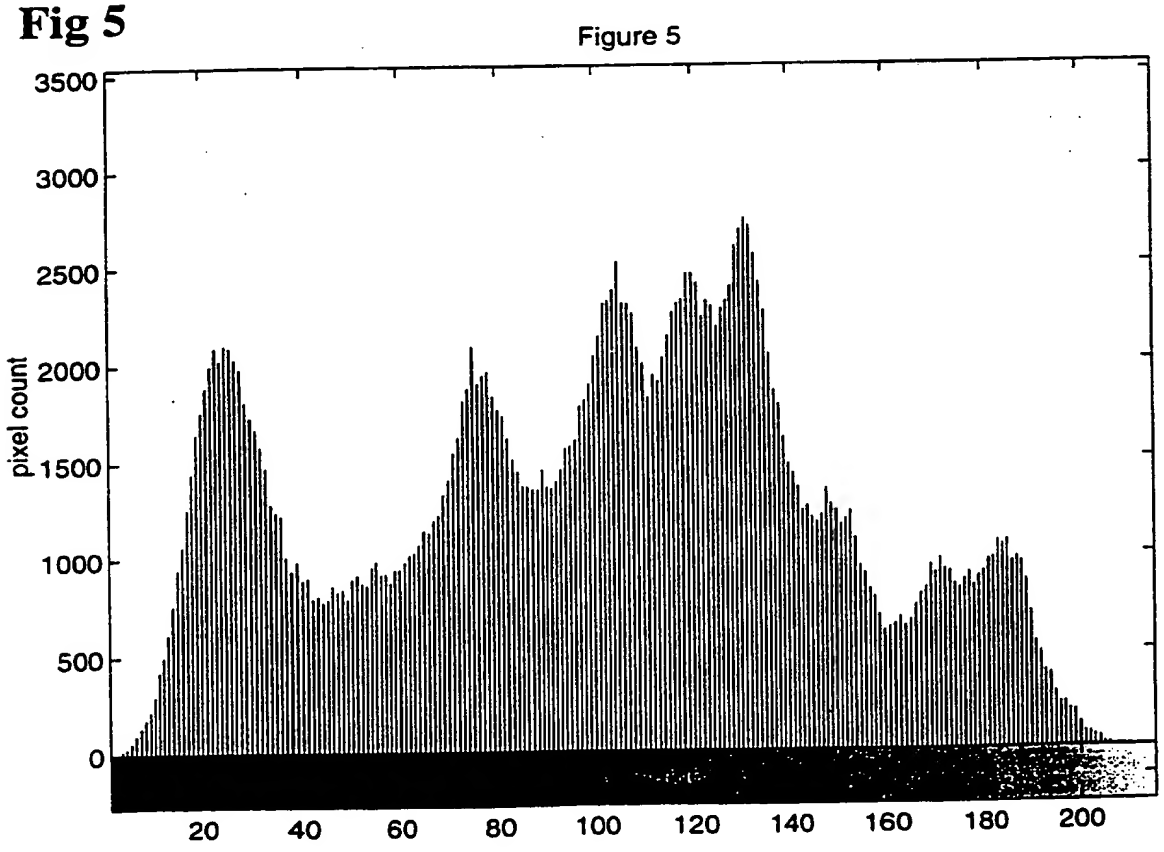

Fig 6A

	(1,1)	(2,1)	(3,1)	(4,1)
(1,1)	100	110	**84**	192
(1,2)	120	65	78	103
(1,3)	115	20	144	76
(1,4)	90	78	46	104
(1,5)	104	89	120	42
(1,6)	99	72	122	88
(1,7)	78	120	69	77
(1,8)	40	**84**	65	10

Fig 6B

	(1,1)	(2,1)	(3,1)	(4,1)
(1,1)	100	110	84	192
(1,2)	120	65	78	103
(1,3)	115	20	144	76
(1,4)	90	78	46	**104**
(1,5)	**104**	89	120	42
(1,6)	99	72	122	88
(1,7)	78	120	69	77
(1,8)	40	84	65	10

Fig 7

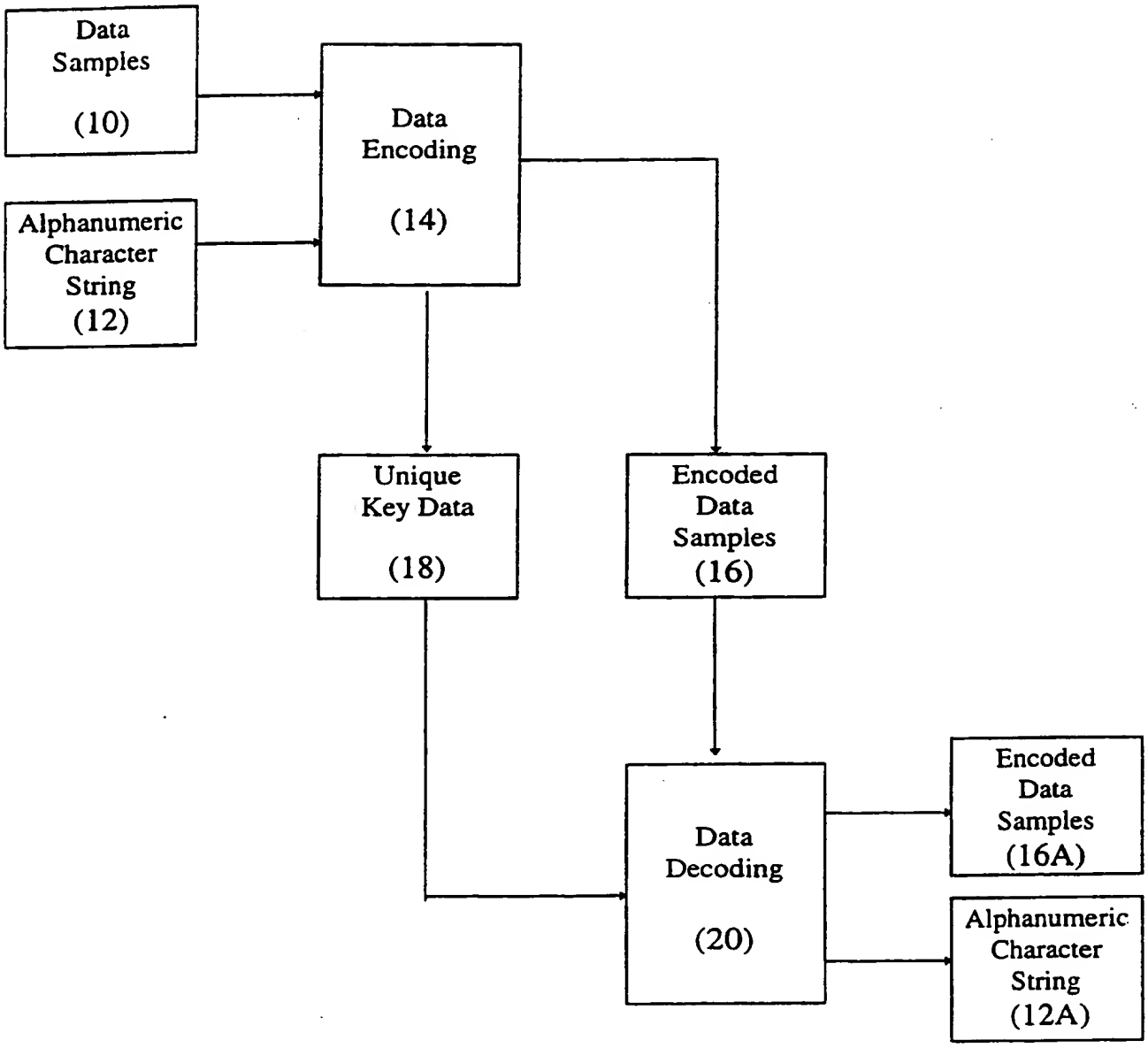
Data Samples (10)
Alphanumeric Character String (12)
Data Encoding (14)
Unique Key Data (18)
Encoded Data Samples (16)
Data Decoding (20)
Encoded Data Samples (16A)
Alphanumeric Character String (12A)

Fig 8

```
PROCEDURE TEXT ENCODER

        READ UNLABELLED DATA;
        CONVERT UNLABELLED DATA INTO INTEGER ARRAY
        READ ALPHANUMERIC CHARACTER STRING;
        CONVERT CHARACTER STRING TO INTEGER ARRAY;

        PROCEDURE SPATIAL LABELLER;

        GENERATE UNIQUE KEY DATA FROM KEY ELEMENTS CONTAINING
        MATCHING LOCATIONS;
        CONVERT LABELLED INTEGER ARRAY TO LABELLED DATA;
        STORE UNIQUE KEY;
        STORE LABELLED DATA

END
```

Fig 9

```
PROCEDURE TEXT DECODER

        READ LABELLED DATA;
        CONVERT LABELLED DATA INTO INTEGER ARRAY;

        READ UNIQUE KEY;
        EXTRACT SPATIAL LOCATIONS FROM UNIQUE KEY;
        DECODE CHARACTER INTEGER ARRAY FROM SPATIAL LOCATIONS;
        CONVERT CHARACTER INTEGER ARRAY TO ALPHANUMERIC
        CHARACTER STRING;
        DISPLAY ALPHANUMERIC CHARACTER STRING

END
```

Fig 10

```
PROCEDURE SPATIAL LABELLER

    READ UNLABELLED DATA INTEGER ARRAY;
    READ CHARACTER INTEGER ARRAY;
    DETERMINE LENGTH OF CHARACTER INTEGER ARRAY;
    DO 1 TO LENGTH
        SEARCH AND MATCH UNLABELLED DATA ELEMENT AND
        CHARACTER ELEMENTS;
        IF NO MATCH THEN
            INCREMENT OR DECREMENT CHARACTER INTEGER
            VALUE BY ONE;
            REPEAT SEARCH;
                OVERWRITE UNLABELLED DATA INTEGER WITH
                VALUE TO BE MATCHED;
                STORE SPATIAL LOCATION TO KEY ELEMENT;
            UNTIL DATA ELEMENT MATCHED
        ELSE
            STORE SPATIAL LOCATION TO KEY ELEMENT;
        END
        STORE LABELLED DATA ELEMENT TO LABELLED INTEGER
        ARRAY;
    END

END
```

Fig 11

Unlabeled:lena512

labeled:lena512

Fig 12

"As digital watermarking is a relatively new technology, DataMark expects the market for its product DataCam to be substantial. For example, in a recent survey on the Internet market, compound annual growth rates of 37.6% and 91.1% in Internet access and software products, respectively, are forecast for the years from 1996 to 2000. These growth rates translate to revenues of US$3.15b for 1996 and $11.3b for 2000, in Internet access, and $916m for 1996 and $12.2b for 2000, in software products [1]. As the Internet continues to grow on a rapid scale, more legal questions related to copyright protection will surface and need to be seriously addressed by the Internet community. One potential solution is the use of digital watermarking or camouflaging technology in digital data. "